

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-23. (Cancelled)

24. (Original) A method of controlling the migration of particulates in a subterranean formation comprising the steps of:

isolating a zone in a subterranean formation;

providing a resin composition comprising a resin, a hardening agent, a hydrocarbon diluent, a silane coupling agent, a foaming agent, a compressible gas, and a degradable material;

placing the resin composition in at least a portion of the zone; and,

allowing the resin to substantially cure and the degradable material to substantially degrade so as to form a permeable, hardened resin mass.

25. (Original) The method of claim 24 wherein the resin comprises an epoxy resin, a furan resin, a phenolic resin, a furan/furfuryl alcohol resin, a phenolic/latex resin, a phenol formaldehyde resin, a polyester resin; a hybrid polyester resin; a copolymers polyester resin; a polyurethane resin; a hybrid polyurethane resin; a copolymers polyurethane resin, an acrylate resins, or a combination thereof.

26. (Original) The method of claim 24 wherein the hardening agent comprises an amine, an aromatic amine, a polyamine, an aliphatic amine, a cyclo-aliphatic amine, an amide, a polyamide, 2-ethyl-4-methyl imidazole, 1,1,3-trichlorotrifluoroacetone, or a combination thereof.

27. (Original) The method of claim 24 wherein the hardening agent comprises from about 40% to about 60% of the resin composition by weight of the resin therein.

28. (Original) The method of claim 24 wherein the hydrocarbon diluent comprises one or more aromatic hydrocarbons.

29. (Original) The method of claim 24 wherein the hydrocarbon diluent comprises from about 40% to about 60% of the resin composition by weight of the resin therein.

30. (Original) The method of claim 24 wherein the silane coupling agent comprises N-2-(aminoethyl)-3-aminopropyltrimethoxysilane, 3-glycidoxypropyltrimethoxysilane, n-beta-(aminoethyl)-gamma-aminopropyl trimethoxysilane, or a combination thereof.

31. (Original) The method of claim 24 wherein the silane coupling agent comprises from about 0.01% to about 5% of the resin composition by weight of the resin therein.

32. (Original) The method of claim 24 wherein the foaming agent comprises a fluorinated alkyl alkoxylate, a fluorinated alkyl ester, a fluorinated aliphatic polymeric ester, or a combination thereof.

33. (Original) The method of claim 24 wherein the foaming agent comprises from about 0.01% to about 5% of the resin composition by weight of the resin therein.

34. (Original) The method of claim 24 wherein the compressible gas comprises air, nitrogen, or a combination thereof.

35. (Original) The method of claim 24 wherein the compressible gas comprises from about 6 to about 12 pounds per gallon of the resin composition by weight of the sum of all the other components in the resin composition.

36. (Original) The method of claim 24 wherein the degradable material comprises a degradable polymer, a dehydrated salt, a material that degrades when subjected to the subterranean formation temperature, or a combination thereof.

37. (Original) The method of claim 24 wherein the degradable material comprises from about 1% to about 60% of the resin composition by weight of the resin therein.

38. (Original) The method of claim 24 further comprising a filler material.

39. (Original) The method of claim 38 wherein the filler material comprises sand, nut hulls, bauxite, ceramics, polymeric materials, fly ash, bottom ash, or a combination thereof.

40. (Original) The method of claim 38 wherein the filler comprises from about 1% to about 60% of the resin composition by weight of the resin therein.

41. (Original) A method of at least partially maintaining the integrity of a subterranean fracture comprising the steps of:

providing a resin composition comprising resin, a hardening agent, a hydrocarbon diluent, a silane coupling agent, a foaming agent, a compressible gas, and a degradable material;

placing the resin composition into at least one fracture in a subterranean formation; and,

allowing the resin to substantially cure and the degradable material to substantially degrade so as to form a permeable, hardened resin mass.

42. (Original) The method of claim 41 wherein the resin comprises an epoxy resin, a furan resin, a phenolic resin, a furan/furfuryl alcohol resin, a phenolic/latex resin, a phenol formaldehyde resin, a polyester resin; a hybrid polyester resin; a copolymers polyester resin; a polyurethane resin; a hybrid polyurethane resin; a copolymers polyurethane resin, an acrylate resins, or a combination thereof.

43. (Original) The method of claim 41 wherein the hardening agent comprises an amine, an aromatic amine, a polyamine, an aliphatic amine, a cyclo-aliphatic amine, an amide, a polyamide, 2-ethyl-4-methyl imidazole, 1,1,3-trichlorotrifluoroacetone, or a combination thereof.

44. (Original) The method of claim 41 wherein the hardening agent comprises from about 40% to about 60% of the resin composition by weight of the resin therein.

45. (Original) The method of claim 41 wherein the hydrocarbon diluent comprises one or more aromatic hydrocarbons.

46. (Original) The method of claim 41 wherein the hydrocarbon diluent comprises from about 40% to about 60% of the resin composition by weight of the resin therein.

47. (Original) The method of claim 41 wherein the silane coupling agent comprises N-2-(aminoethyl)-3-aminopropyltrimethoxysilane, 3-glycidoxypropyltrimethoxysilane, n-beta-(aminoethyl)-gamma-aminopropyl trimethoxysilane, or a combination thereof.

48. (Original) The method of claim 41 wherein the silane coupling agent comprises from about 0.01% to about 5% of the resin composition by weight of the resin therein.

49. (Original) The method of claim 41 wherein the foaming agent comprises a fluorinated alkyl alkoxylate, a fluorinated alkyl ester, a fluorinated aliphatic polymeric ester, or a combination thereof.

50. (Original) The method of claim 41 wherein the foaming agent comprises from about 0.01% to about 5% of the resin composition by weight of the resin therein.

51. (Original) The method of claim 41 wherein the compressible gas comprises air, nitrogen, or a combination thereof.

52. (Original) The method of claim 41 wherein the compressible gas comprises from about 6 to about 12 pounds per gallon of the resin composition by weight of the sum of all the other components in the resin composition.

53. (Original) The method of claim 41 wherein the degradable material comprises a degradable polymer, a dehydrated salt, a material that degrades when subjected to the subterranean formation temperature, or a combination thereof.

54. (Original) The method of claim 41 wherein the degradable material comprises from about 1% to about 60% of the resin composition by weight of the resin therein.

55. (Original) The method of claim 41 further comprising a filler material.

56. (Original) The method of claim 55 wherein the filler material comprises sand, nut hulls, bauxite, ceramics, polymeric materials, fly ash, bottom ash, or a combination thereof.

57. (Original) The method of claim 55 wherein the filler comprises from about 1% to about 60% of the resin composition by weight of the resin therein.

58-80. (Cancelled)